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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/687,436 | 10/16/2003 | Franz Kummer | 99P5545CON1 | 8037 |

24252 7590 03/29/2005

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| EXAMINER |
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KOSLOW, CAROL M

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| ART UNIT | PAPER NUMBER |
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1755

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,436

Applicant(s)

KUMMER ET AL.

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 12-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/787,208.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/30/04</u> . | 6) <input type="checkbox"/> Other: ____ |

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WO 98/05087; JP 49-3629 and JP 49-3631, cited in the Information Disclosure Statement of 30 January 2004, have been considered with respect to the provided English abstracts.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The processes of claims 32, 33, 35, 36, 39-42, 44, 45 and 47-51 are not found in the specification. The only teaching of the process for making a phosphor having the claimed formula is found in the examples, where the flux is limited to boric acid or boric acid and barium fluoride, the firing conditions in the two firing step process are 1450-1500°C and three hours for the first firing step and 1500-1550°C and three hours for the second firing step and the firing conditions for the one firing step method is 1550°C for six hours. These teachings do not support the claimed process where the firing conditions are those that will produce the phosphor or where the total firing temperature range is 1450-1550°C and there is no indication that the amount of the B oxide is in excess.

It is noted that the insertion of the process limitations of claims 32, 33, 35, 36, 39-42, 44, 45 and 47-51 will mean this application is a continuation-in-part of 09/787,208, not a continuation and that the effective filing date of these limitations would be 16 October 2003, not 8 July 2000.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 12-31 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-33 of U.S. Patent No. 6,669,866 in view of U.S. patent 6,066,861.

The claims of the patent teach a light source comprising the terbium garnet phosphor claimed in this application and the light emitting diode (LED) claimed in this application. The claims in the patent do not teach how to make the claimed light sources. U.S. patent 6,066,861 teaches LED/garnet based light sources are produced by encapsulating the LED in an epoxy resin containing a garnet phosphor. One of ordinary skill in the art would have found it obvious to produce the light sources claimed in the patent by the process of .

Claims 12-15, 17, 18, 20 and 22-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3 and 6 of U.S. Patent No. 6,504,179 in view of U.S. patent 6,066,861.

The claims of the patent teach a white light emitting light source comprising a terbium garnet phosphor having the formula $Tb_3(Al,Ga)_5O_{12}:Ce$ and the light emitting diode (LED) claimed in this application. This means the source has a color temperature less than 5000K. While the claims do not teach the amount of cerium, one of ordinary skill in the art knows that the amount is that effective to produce luminescence, which would fall within or overlap the claimed ranges since the claimed ranges are an effective amount range which produces luminescence. The claims in the patent do not teach how to make the claimed light sources.

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U.S. patent 6,066,861 teaches LED/garnet based light sources are produced by encapsulating the LED in an epoxy resin containing a garnet phosphor. One of ordinary skill in the art would have found it obvious to produce the light sources claimed in the patent by the process of .

Claims 32-52 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for producing a phosphor having the formulas in claims 32, 38, 41 and 48 by intimately mixing oxides of cerium, A and B and a flux of boric acid or boric acid and barium fluoride and firing the mixture in a forming gas 1550°C for six hours or by intimately mixing oxides of cerium, A and B and a flux of boric acid or boric acid and barium fluoride and firing the mixture in a forming gas at 1450-1500°C for three hours, milling the fired mixture and firing the milled material in a forming gas at 1500-1550°C for three hours does not reasonably provide enablement for by intimately mixing oxides of cerium, A and B and firing the mixture in a forming gas at the conditions to form the phosphor or by intimately mixing oxides of cerium, A and B and a flux and firing the mixture in a forming gas at the conditions to form the phosphor, milling the fired mixture and firing the milled material in a forming gas at the conditions to form the phosphor. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The claims recite forming a terbium containing garnet by intimately mixing oxides of cerium, A and B and firing the mixture in a forming gas at the conditions to form the phosphor or by intimately mixing oxides of cerium, A and B and a flux and firing the mixture in a forming gas at the conditions to form the phosphor, milling the fired mixture and firing the milled material in a forming gas at the conditions to form the phosphor. This encompasses any

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temperature conditions and flux, such as heating in the range of about 900-1700°C and the metal fluoride fluxes as taught by U.S. patent 6,596,195. However, the specification only teaches the flux is boric acid or boric acid and barium fluoride and the heating temperatures in the ranges of 1450-1500°C and 1500-1550°C. Such a limited disclosure does not support the breadth of the instant claims. The examiner suggests the incorporation of the disclosed fluxes and temperature ranges.

U.S. patents 6,596,195 and 6,630,077 are cited as of interest since the patents claim forming terbium containing garnet phosphors having the formula $Tb_{1-x-y}Ce_yRE_x(Al,Ga)_5O_{12}$ by intimately mixing oxides of cerium, Tb and Al and/or Ga and a flux and firing the mixture in a reducing atmosphere at the conditions to form the phosphor.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
March 22, 2005


C. Melissa Koslow
Primary Examiner
Tech. Center 1700